HITACHI

AV SURROUND RECEIVER

HTA-DD3E/EBS/W/WUN/WAU

Instruction Manual

DIGITAL dts SURROUND

DOLBY DIGITAL

Before operating please read all these instructions thoroughly.
Bitle lesen Sie diese Bedienungsanleitung vor der Inbetriebnahme sorglälting durch.
Veuiltez lire ces instructions dans le detail avant de meltre l'appareil en fonction.
Antes de ponerio en funcionamiento lea la totalidad de estas instrucciones.
Prima dell'uso, leggere attentamente le seguenti istruzioni.
Lees deze gebruiksaanwijzing aandachtig door alvorens dit toestel in gebruik te nemen.
Läs dessa anvïsningar noga, innan du borjar att använda apparaten.
Læs venligst instruktioneme igennem, før De tager apparatet i brug.

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■ DECLARATION OF CONFORMITY

We declare under our sole responsibility that this product, to which this declaration relates, is in conformity with the following standards:
EN60065, EN55013, EN55020, EN61000-3-2 and EN61000-3-3.
Following the provisions of 73/23/EEC, 89/336/EEC and 93/68/EEC Directive.

■ SAFETY PRECAUTIONS

- The POWER button on the front panel and remote control switches the unit from ON to STANDBY but does not isolate the unit from the mains supply. If it is to be left unattended for a long period of time, it is recommended that the unit is switched to standby and the mains plug is removed from the socket.
- Check that all connections are proper and that there are no problems with the connection cords. Always set the power to standby mode before connecting and disconnecting connection cords.
- If no sound is emitted from the speakers when the POWER is ON, turn down the MASTER VOLUME control and press the POWER button to switch the unit to standby mode. Then, check if the speaker cords are properly connected.
- To prevent short circuits or damaged wires in the connection cords, always unplug the power cord and disconnect the connection cords between all other audio components when moving the unit.
- This unit contains a muting circuit and it takes about 5 – 6 seconds for this unit to reach stable operation after switching the set to POWER ON mode.
- Never open the covers or touch the insides or insert a metal object. Any of these could cause an electric shock or a fault.
- When an electrical storm is present, unplug the power cord and disconnect the antenna connections.
- The apparatus should not be exposed to dripping or splashing.
- To clean the cabinets and panels when dirty, clean off dirt on the surfaces with a soft, dry cloth. Never use thinner, benzene or alcohol, as these will damage the surface finish.
- Protect the unit against excessive heat (e.g. direct sunlight), dust and moisture.
- Be careful not to damage the power supply cord. Be sure to hold the plug when pulling it out; do not pull the cord.
- Do not install the set in a confined location; otherwise, heat dissipation will be poor and malfunctions may occur.

SAFEGUARDS
Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. Improper use can result in potential electrical shock or fire hazards. In order not to defeat the safeguards, observe the following instructions for its installation, use and servicing.

■ NOTES

- SWITCHING THE INPUT FUNCTION WHEN INPUT JACKS ARE NOT CONNECTED
  A clicking noise may be produced if the input function is switched when nothing is connected to the input jacks. If this happens, either turn down the MASTER VOLUME control or connect components to the input jacks.
- MUTING OF PRE OUT JACKS
  The PRE OUT jacks include a muting circuit. Because of this, the output signals are greatly reduced for several seconds after the power operation switch is turned on or input function, surround mode or any other set-up is changed.
  If the volume is turned up during this time, the output will be very high after the muting circuit stops functioning. Always wait until the muting circuit turns off before adjusting the volume.

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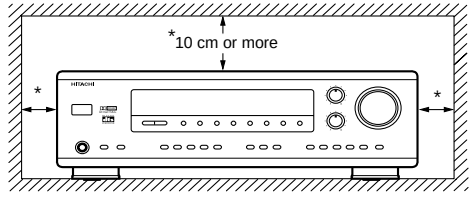
• ACCESSORIES

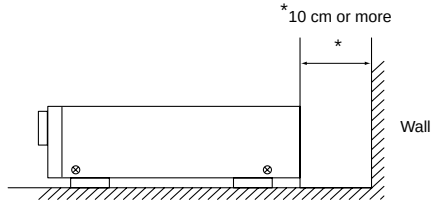
Check that the following parts are included in addition to the main unit HTA-DD3E:

- Instruction manual 1
- Remote control unit (RB-DD1) 1
- R6P/AA Batteries 2
- AM loop antenna 1
- FM indoor antenna 1

• CAUTIONS ON INSTALLATION

- Always install this unit horizontally.
- For proper heat dissipation, leave at least 10 cm of space between the top, back and sides of this unit and the wall or other components.

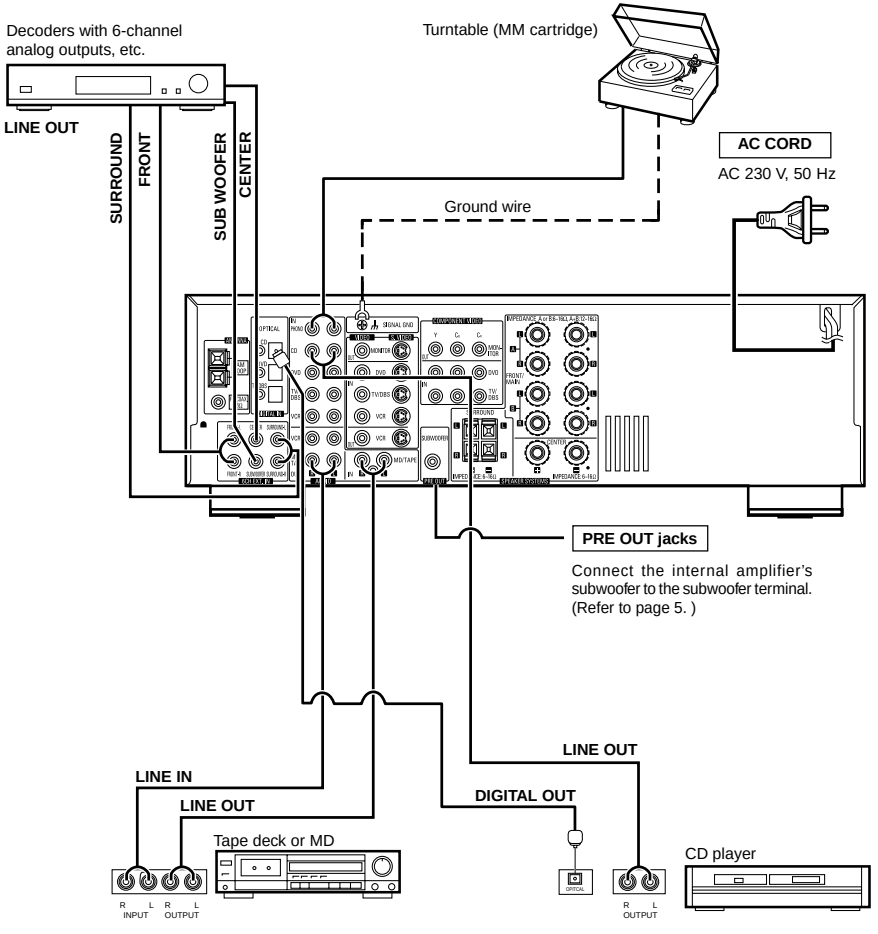




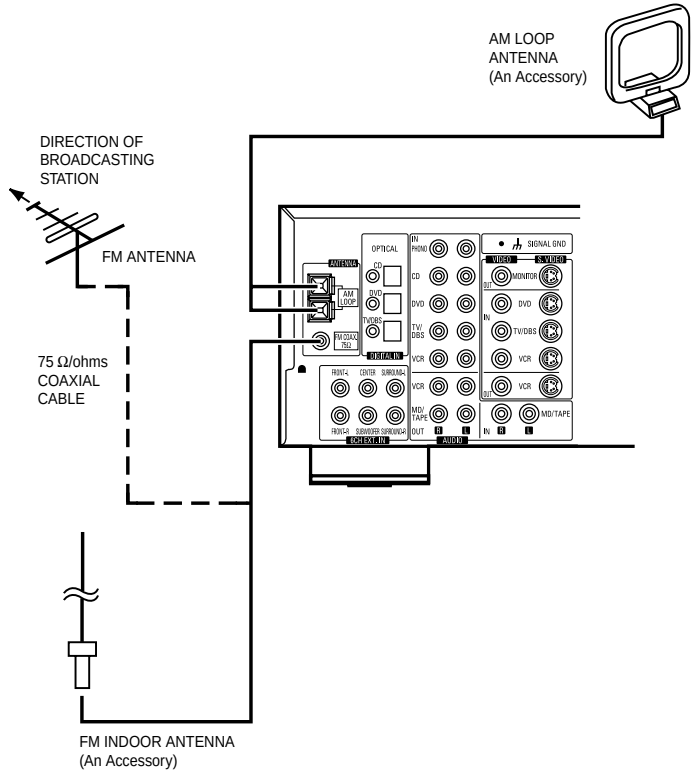
• CONNECTIONS

Connecting the audio components

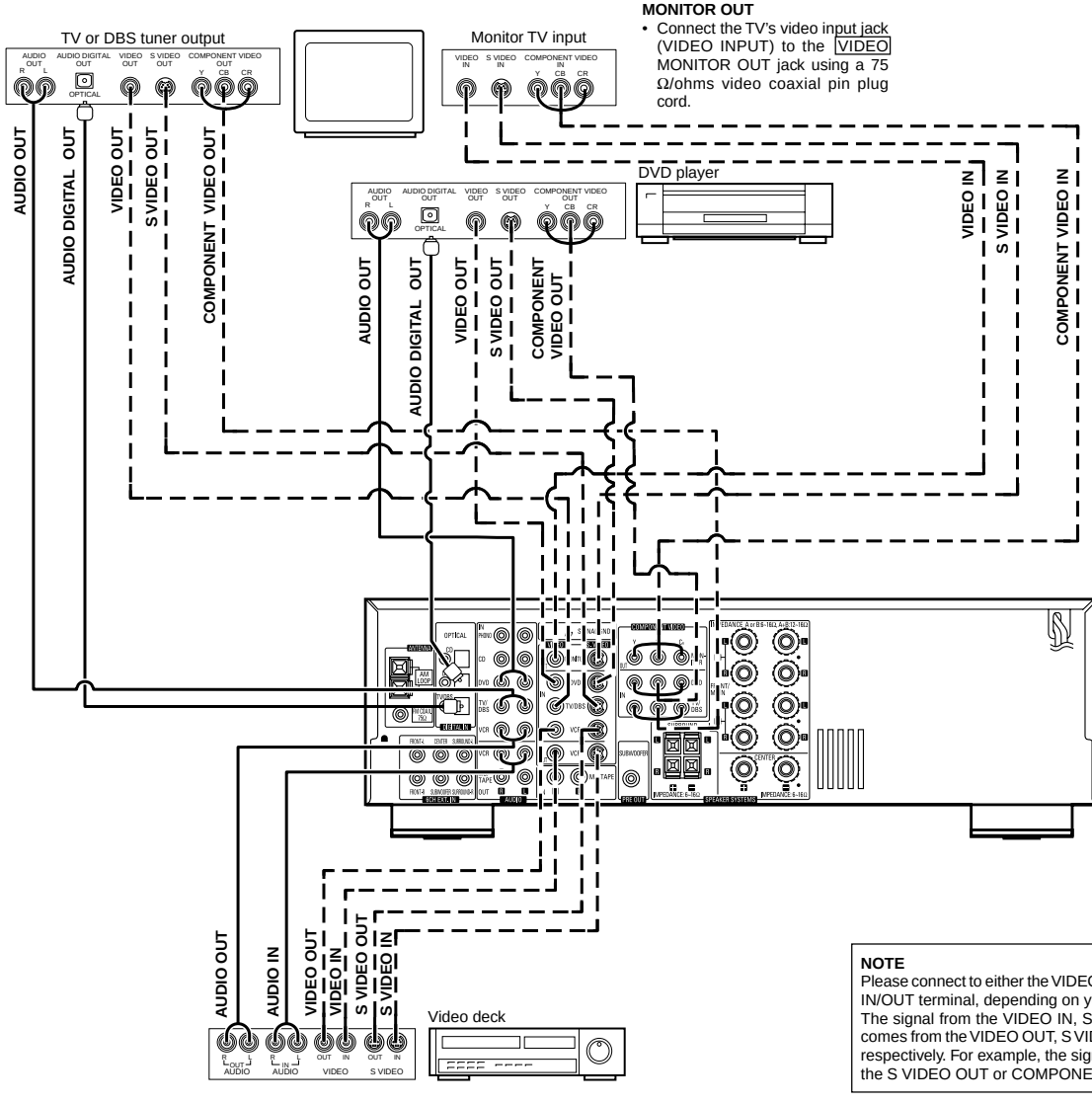
- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in generating hum or other noise.
- Noise or humming may be generated if a connected audio equipment is used independently without turning the power of this unit on. If this happens, turn on the power of the unit.



Connecting the antenna terminals


AM LOOP ANTENNA (An Accessory)
DIRECTION OF BROADCASTING STATION
FM ANTENNA
75 Ω/ohms COAXIAL CABLE
FM INDOOR ANTENNA (An Accessory)

Connecting the video equipments


TV or DBS tuner output
Monitor TV input
MONITOR OUT
• Connect the TV's video input jack (VIDEO INPUT) to the VIDEO MONITOR OUT jack using a 75 Ω/ohms video coaxial pin plug cord.
DVD player
AUDIO OUT
AUDIO DIGITAL OUT
VIDEO OUT
S VIDEO OUT
COMPONENT VIDEO OUT
VIDEO IN
S VIDEO IN
COMPONENT VIDEO IN
AUDIO IN
Video deck

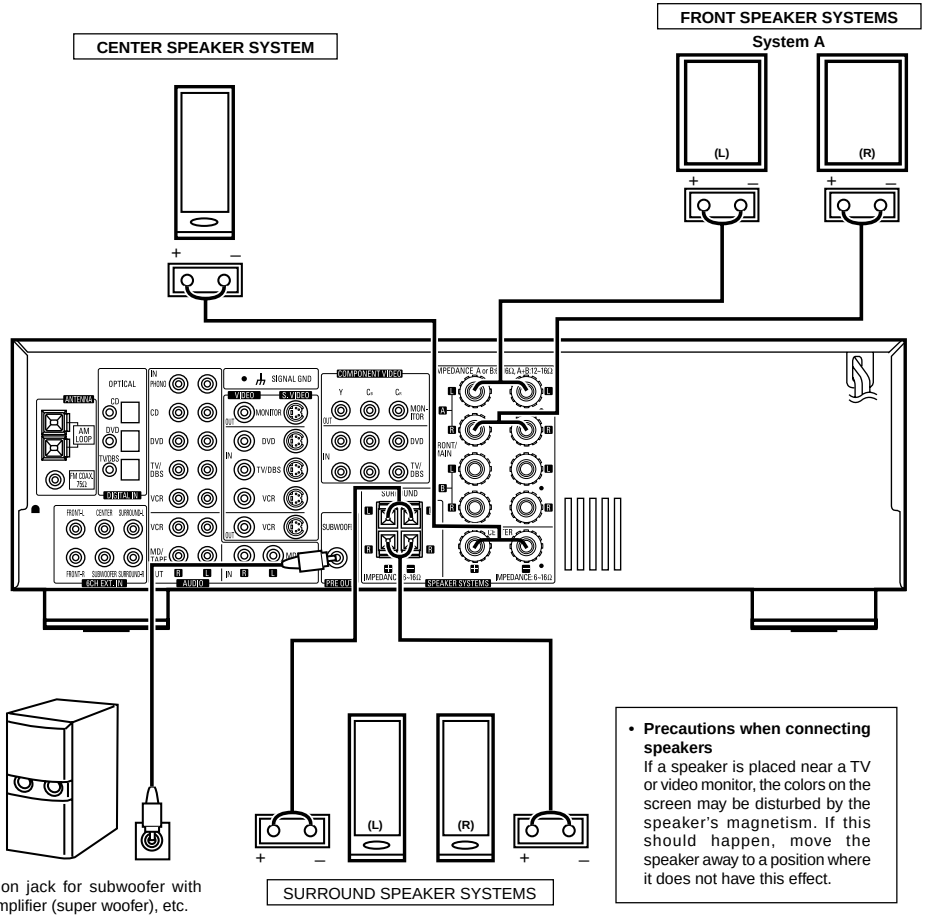
NOTE
Please connect to either the VIDEO IN/OUT, S VIDEO IN/OUT or COMPONENT VIDEO IN/OUT terminal, depending on your video component.
The signal from the VIDEO IN, S VIDEO IN and COMPONENT VIDEO IN terminals comes from the VIDEO OUT, S VIDEO OUT and COMPONENT VIDEO OUT terminals respectively. For example, the signal from the VIDEO IN terminal does not come from the S VIDEO OUT or COMPONENT VIDEO OUT terminals.

Speaker system connections

Speaker impedance

- When speaker systems A and B are used separately, speakers with an impedance of 6 to 16 Ω/ohms can be connected for use as front speakers.
- Be careful when using two pairs of front speakers (A + B) at the same time, since use of speakers with an impedance of 12 to 16 Ω/ohms.
- Speakers with an impedance of 6 to 16 Ω/ohms can be connected for use as center and surround speakers.

NOTE:
NEVER touch the speaker terminals when the power is on. Doing so could result in electric shocks.



Connection jack for subwoofer with built-in amplifier (super woofer), etc.

- **Precautions when connecting speakers**
  If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.

NOTE

• Protector circuit

This unit is equipped with a high–speed protection circuit. The purpose of this circuit is to protect the speakers under circumstances such as when the output of the power amplifier is inadvertently short-circuited and a large current flows, when the temperature surrounding the unit becomes unusually high, or when the unit is used at high output over a long period which results in an extreme temperature rise.

When the protection circuit is activated, the speaker output is cut off and the power supply indicator LED flashes. Should this occur, please follow these steps: be sure to switch off the power of this unit, check whether there are any faults with the wiring of the speaker cables or input cables, and wait for the unit to cool down if it is very hot. Improve the ventilation condition around the unit and switch the power back on.

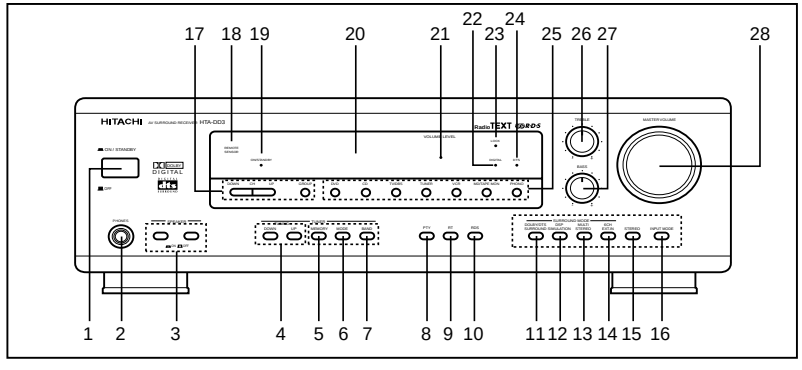
If the protection circuit is activated again even though there are no problems with the wiring or the ventilation around the unit, switch off the power and contact a HITACHI service center.

• Note on speaker impedance

The protector circuit may be activated if the set is played for long periods of time at high volumes when speakers with an impedance lower than the specified impedance (for example speakers with an impedance of lower than 4 Ω/ohms) are connected. If the protector circuit is activated, the speaker output is cut off. Turn off the set's power, wait for the set to cool down, improve the ventilation around the set, then turn the power back on.

• PART NAMES AND FUNCTIONS

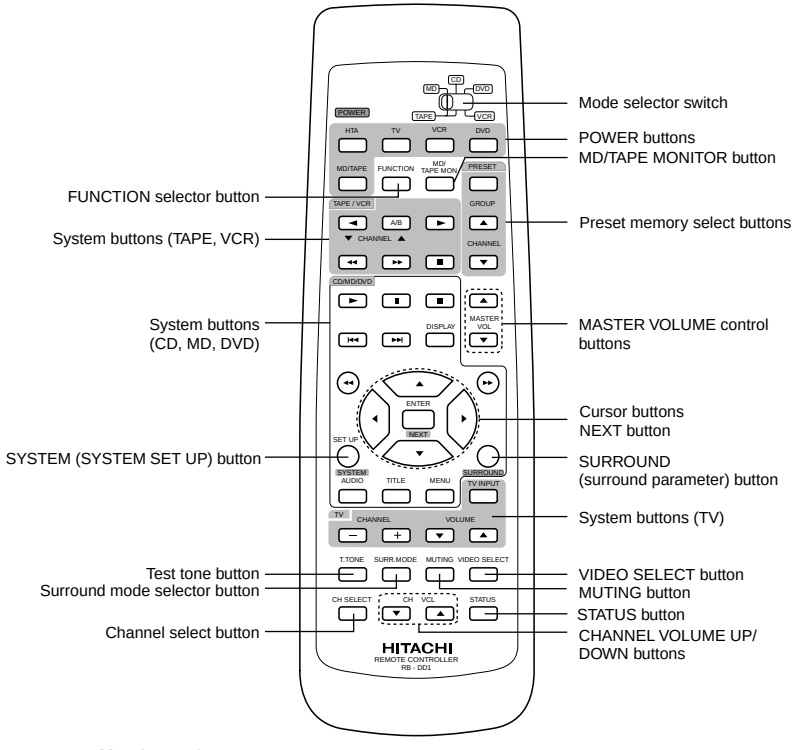
Front Panel



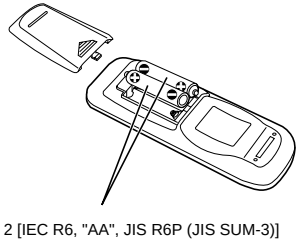
1. Power operation switch
2. Headphones jack (PHONES)
3. Front SPEAKER A/B buttons
4. TUNING UP/DOWN buttons
5. MEMORY button
6. MODE button
7. BAND button
8. PTY button
9. RT button
10. RDS button
11. DOLBY/DTS SURROUND button
12. DSP SIMULATION button
13. MULTI STEREO button
14. 6CH external input button (6 CH EXT. IN)
15. STEREO button
16. INPUT MODE selector button
17. Preset memory selector buttons
18. Remote control sensor (REMOTE SENSOR)
19. Power indicator (ON/STANDBY)
20. Display
21. Master volume indicator (VOLUME LEVEL)
22. DOLBY digital input indicator
23. Digital lock indicator (LOCK)
24. DTS input indicator
25. Input source selector buttons
26. TREBLE adjustment control
27. BASS adjustment control
28. MASTER VOLUME control

• REMOTE CONTROL UNIT

- The remote control unit will operate from a direct distance of approximately 7 meters, but this distance will be shortened if obstacles are present or if operated at an angle. (The remote control unit will operate at an angle of up to 30° in either direction.)



BATTERY INSERTION



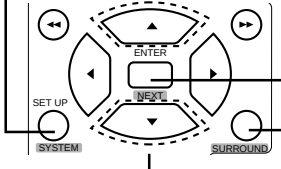
1.5V X 2 [IEC R6, "AA", JIS R6P (JIS SUM-3)]

• SETTING UP THE SYSTEM

- These settings are required to set up the listening room's AV system centered around the unit.

1 Set the slide switch to "CD" or "MD".

2 Use the following buttons to set up the system:



SYSTEM (SYSTEM SET UP) button

Press this to display the system setup menu. Also use this button to finish the setting on the display.

NEXT button

Press this to switch the items.

SURROUND (surround parameter) button

Press this to display the surround parameter menu.

CURSOR buttons

◁▷ and △▽ : Use the cursor (◁▷ and △▽) buttons to select the settings.

- System setup items and default values (set upon shipment from the factory)

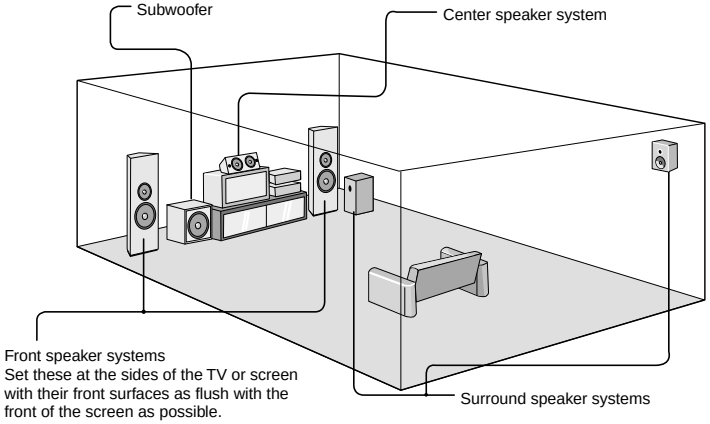
	System setup		Default settings			
①	Speaker Configuration	Input the combination of speakers in your system and their corresponding sizes (SMALL for regular speakers, LARGE for full-size, full-range) to automatically set the composition of the signals output from the speakers and the frequency response.	Front Sp.	Center Sp.	Surround Sp.	Sub Woofer
			Large	Small	Small	Yes
②	Delay Time	This parameter is for optimizing the timing with which the audio signals are produced from the speakers and subwoofer according to the listening position.	Front & Sub Woofer	Center	Surround	
			3.7 m	3.7 m	3.1 m	

- Playback with the above setting is possible upon shipment from the factory and after initializing (refer to page 22).

Speaker system layout

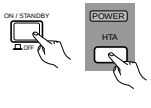
Basic system layout

• The following is an example of the basic layout for a system consisting of six speaker systems and a television monitor:


Subwoofer
Center speaker system
Front speaker systems
Set these at the sides of the TV or screen with their front surfaces as flush with the front of the screen as possible.
Surround speaker systems

Before setting up the system

1 Check that all the components are correct, then press the POWER operation switch on the main unit or the POWER button on the remote control unit to turn on the power.



2 Press the SYSTEM button to enter the setting.

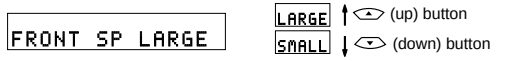
3 Press the NEXT button to switch to the speaker configuration set up.

NOTE:

Press the SYSTEM button again to finish system set up. System set up can be finished at any time. The changes to the settings made up to that point are entered.

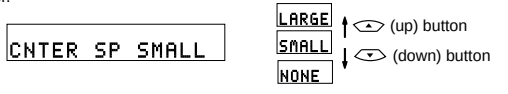
Setting the speaker configuration

1 Use the ▲ (up) and ▼ (down) buttons to select your front speaker parameter.



Press the NEXT button to switch to the center speaker setting.

2 Use the ▲ (up) and ▼ (down) buttons to select your center speaker parameter.

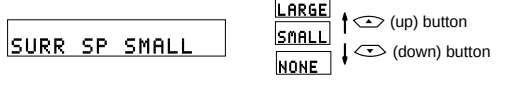


Press the NEXT button to switch to the surround speaker setting.

NOTES:

- When “Small” has been selected for the front speakers, “Large” cannot be selected for the center speaker.
- “None” cannot be selected for both the center speaker and surround speakers simultaneously.
- STEREO mode does not have this setting.

3 Use the ▲ (up) and ▼ (down) buttons to select your surround speaker parameter.

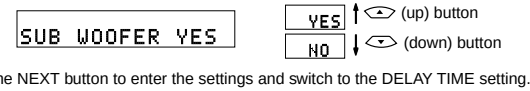


Press the NEXT button to switch to the subwoofer setting.

NOTES:

- When “Small” has been selected for the front speakers, “Large” cannot be selected for the surround speakers.
- When “None” has been selected for the center speaker, “None” cannot be selected for the surround speakers.
- STEREO mode does not have this setting.

4 Use the ▲ (up) and ▼ (down) buttons to select your subwoofer setting.



Press the NEXT button to enter the settings and switch to the DELAY TIME setting.

■ Parameters

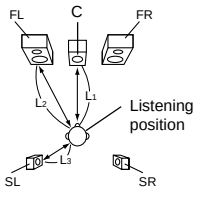
Large ..... Select this when using speakers that can fully reproduce low sounds of below 80 Hz.
Small ..... Select this when using speakers that cannot reproduce low sounds of below 80 Hz with sufficient volume. When this setting is selected, low frequencies of below 80 Hz are assigned to the subwoofer.
None ..... Select this when no speakers are installed.
Yes/No .... Select “Yes” when a subwoofer is installed, “No” when it’s not installed.

NOTE:

Select “Large” or “Small” not according to the physical size of the speaker, but according to the bass reproduction capacity at 80 Hz. If you cannot determine the best setting, try comparing the sound when set to “Small” and when set to “Large”, at a level that will not damage the speakers.

Setting the delay time

Input the distances from the listening position to the speakers and set the surround delay time.



Preparations:
Measure the distances from the listening position to the speakers (L1 to L3 on the diagram at the right).

L1: Distance from center speaker to listening position
L2: Distance from front speakers to listening position
L3: Distance from surround speaker to listening position

NOTES:
- Set the center speaker at the same distance from the front speakers (left and right) or the subwoofer, or so that the difference in distance (L2 – L1) is 1.5 meters or less.
- Set the surround speakers (left and right) at the same distance from the front speakers (left and right) or the subwoofer, or so that the difference in distance (L2 – L3) is 4.5 meters or less.

1

Use the ⌃ (up) and ⌄ (down) buttons to set the distance from the front speakers and the subwoofer to the listening position.

```
FL/FR/SW  4.0m
```

- The number changes in units of 0.3 metres each time one of the buttons is pressed. Select the value closest to the measured distance. ("SW" appears only when subwoofer = yes.)

Press the NEXT button to switch to the center speaker setting.

2

Use the ⌃ (up) and ⌄ (down) buttons to set the distance from the center speakers to the listening position.

```
CENTER    3.7m
```

- The number changes in units of 0.3 metres each time one of the buttons is pressed. Select the value closest to the measured distance.

Press the NEXT button to switch to the surround speaker setting.

NOTE:
- No setting when "None" has been selected for the center speaker.

3

Use the ⌃ (up) and ⌄ (down) buttons to set the distance from the surround speakers to the listening position.

```
SURR.L/R 3.4m
```

- The number changes in units of 0.3 metres each time one of the buttons is pressed. Select the value closest to the measured distance.

NOTE:
- No setting when "None" has been selected for the surround speakers.

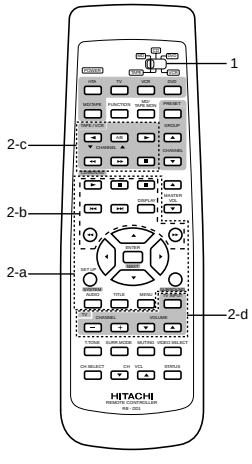
After setting up the system

1

Press the SYSTEM button to finish system set up.

This completes the system setup operations. Once the system is set up, there is no need to make the settings again unless other components or speakers are connected or the speaker layout is changed.

Operating Audio/Video components stored in the preset memory

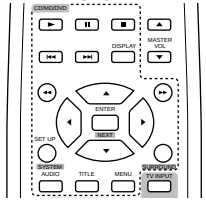


Audio/Video components stored in the preset can be controlled using this unit's remote control unit.
Note that some components Audio/Video components stored in the preset memory, however, cannot be operated with this remote control unit.

1 Set the slide switch to the position for the component to be operated.

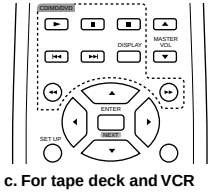
2 Use the buttons shown below to operate the audio component.
For details, refer to the respective component's manual.

a. For DVD player



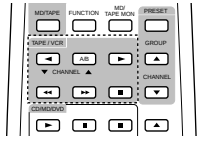
POWER	: Power on/off
▶	: Play
❚❚	: Pause
■	: Stop
⏮,⏭	: Auto search
◀◀,▶▶	: Reverse/Forward
▲,▼,◀,▶	: Cursor up/down/ left/right
DISPLAY	
ENTER	
SET UP	
RETURN	
AUDIO	
TITLE	
MENU	

b. For CD player and MD player



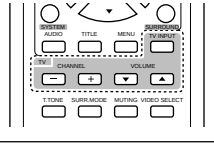
POWER	: Power on/off
▶	: Play
❚❚	: Pause
■	: Stop
⏮,⏭	: Skip
◀◀,▶▶	: Manual search

c. For tape deck and VCR



POWER	: Power on/off
◀	: Reverse play (tape)
A/B	: A/B deck selection (tape)
▶	: Forward play (tape) Play (VCR)
◀◀,▶▶	: Reverse/Forward
■	: Stop
▲CHANNEL▼	: Channel up/down (VCR)

d. For TV

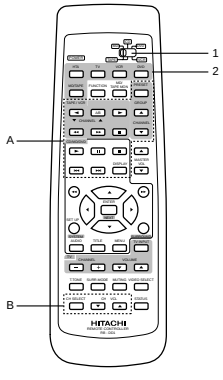


POWER	: Power on/off
CHANNEL +,–	: Channel up/down
VOLUME ▲,▼	: TV volume up/down
TV INPUT	: TV input

NOTE:
- The tuner can be operated when the switch is at any position.

Preset Memory

HITACHI and other makes of components can be operated by setting the preset memory for your make of video component.
Operation is not possible for some models.



1 Set the slide switch to the desired component.

2 Holding in the POWER button of the components (DVD, MD, TAPE, VCR or TV) you want to set, press the button for the corresponding manufacturer in block A. (Refer to Table 1.)

3 Next, while holding in the POWER button, press the button for the code in block B. (Refer to Table 1.)

4 To continue registering other components, repeat steps 1 to 3.

NOTE:
This remote control unit can only operate HITACHI's CD player at CD position.

Table 1: Combinations of Personal System Codes for Different Manufacturers

"DVD"

A \ B	CH SELECT (ⓐ)	CH VOL DOWN (ⓑ)	CH VOL UP (ⓒ)
PRESET GROUP	HITACHI	–	–
TAPE ◀	DENON A	DENON B	–
TAPE A/B	–	–	–
TAPE ▶	–	–	–
PRESET ▲	PANASONIC	–	–
TAPE ◀◀	–	–	–
TAPE ▶▶	JVC	–	–
TAPE ■	SHARP	–	–
PRESET ▼	SONY	–	–
CD ▶	PIONEER	–	–
CD ❚❚	TOSHIBA	–	–
CD ■	–	–	–
CD ⏮	–	–	–
CD ⏭	–	–	–
DISPLAY	–	–	–

"MD"

A \ B	CH SELECT (ⓐ)	CH VOL DOWN (ⓑ)	CH VOL UP (ⓒ)
PRESET GROUP	–	–	–
TAPE ◀	DENON	–	–
TAPE A/B	–	–	–
TAPE ▶	–	–	–
PRESET ▲	–	–	–
TAPE ◀◀	SHARP	–	–
TAPE ▶▶	–	–	–
TAPE ■	SONY	–	–
PRESET ▼	–	–	–
CD ▶	PIONEER	–	–
CD ❚❚	–	–	–
CD ■	KENWOOD	–	–
CD ⏮	–	–	–
CD ⏭	–	–	–
DISPLAY	–	–	–

NOTES:
- The memory can only be preset for either the MD or the TAPE.
- ▭ Preset codes set upon shipment from the factory and when reset.

"VCR"

A \ B	CH SELECT (ⓐ)	CH VOL DOWN (ⓑ)	CH VOL UP (ⓒ)
PRESET GROUP	HITACHI A	HITACHI B	–
TAPE ◄	–	–	–
TAPE A/B	MITSUBISHI A	MITSUBISHI B	MITSUBISHI C
TAPE ►	PANASONIC A	PANASONIC B	PANASONIC C
PRESET ▲	JVC A	JVC B	JVC C
TAPE ◄◄	SONY A	SONY B	SONY C
TAPE ►►	PIONEER	–	–
TAPE ■	TOSHIBA A	TOSHIBA B	–
PRESET ▼	SANYO A	SANYO B	–
CD ►	SHARP A	SHARP B	–
CD ❚❚	NEC A	NEC B	NEC C
CD ■	PHILIPS A	PHILIPS B	PHILIPS C
CD I◄◄	RCA A	RCA B	–
CD ►►I	GENERAL ELE. A	GENERAL ELE. B	–
DISPLAY	MAGNAVOX A	MAGNAVOX B	MAGNAVOX C

"TV"

A \ B	CH SELECT (ⓐ)	CH VOL DOWN (ⓑ)	CH VOL UP (ⓒ)
PRESET GROUP	HITACHI	–	–
TAPE ◄	–	–	–
TAPE A/B	MITSUBISHI A	MITSUBISHI B	–
TAPE ►	PANASONIC A	PANASONIC B	–
PRESET ▲	JVC	–	–
TAPE ◄◄	SONY	–	–
TAPE ►►	PIONEER	–	–
TAPE ■	TOSHIBA	–	–
PRESET ▼	SANYO	–	–
CD ►	SHARP	–	–
CD ❚❚	NEC	–	–
CD ■	PHILIPS	–	–
CD I◄◄	RCA	–	–
CD ►►I	GENERAL ELE. A	GENERAL ELE. B	–
DISPLAY	MAGNAVOX	–	–

"TAPE"

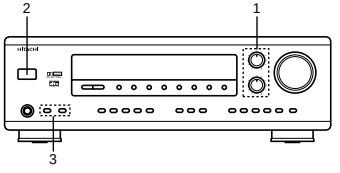
A \ B	CH SELECT (ⓐ)	CH VOL DOWN (ⓑ)	CH VOL UP (ⓒ)
PRESET GROUP	–	–	–
TAPE ◄	–	–	–
TAPE A/B	DENON	–	–
TAPE ►	–	–	–
PRESET ▲	JVC A	JVC B	JVC C
TAPE ◄◄	–	–	–
TAPE ►►	SONY A	SONY B	–
TAPE ■	–	–	–
PRESET ▼	PIONEER A	PIONEER B	–
CD ►	–	–	–
CD ❚❚	KENWOOD A	KENWOOD B	KENWOOD C
CD ■	–	–	–
CD I◄◄	–	–	–
CD ►►I	–	–	–
DISPLAY	–	–	–

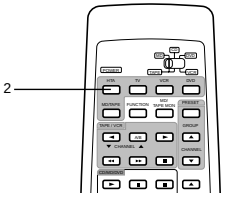
- ▭ Preset codes set upon shipment from the factory and when reset.

NOTES:
- The signals for the pressed buttons are emitted while setting the preset memory. To avoid accidental operation, cover the remote control unit's transmitting window while setting the preset memory.
- Some models and years of manufacturer of components of the manufacturers listed on Table 1 cannot be used.
- The unit is equipped with several types of remote control codes which depend on the manufacturer. If there is no operation when set to ⓐ, please change the setting to ⓑ or ⓒ and try again.

• OPERATIONS

Before operating

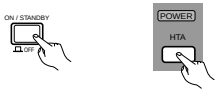




Preparations:
Check that all connections are proper.

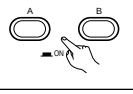
1 Set to the center position.

2 Turn on the power.
Press the power operation switch (button).

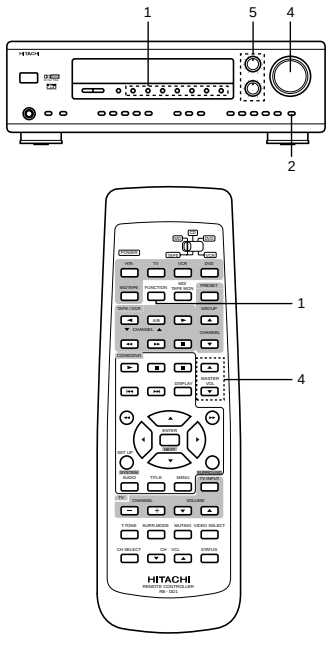


- ON/STANDBY
  When the button is pressed, the power turns on and the display lights after approximately 1 second. When pressed again, the power turns off, the standby mode is set and the display turns off. Several seconds are required from the time the power switch is set to the "ON" position until sound is output. This is due to the built-in muting circuit that prevents noise when the power switch is turned on and off.

3 Select the front speakers.
Press the SPEAKER A or B button to turn the speaker on.



Playing the analog program source

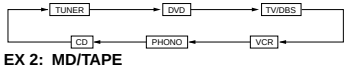


1 Press the button for the program source to be played.

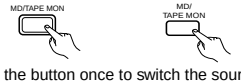
EX 1: CD

or press the FUNCTION button repeatedly until the desired source (CD) appears on the display.

The function switches in the following order each time the FUNCTION button is pressed:

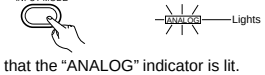


EX 2: MD/TAPE



- Press the button once to switch the source to MD/TAPE input, again to cancel MD/TAPE input.

2 Select the ANALOG input mode.



Check that the “ANALOG” indicator is lit.

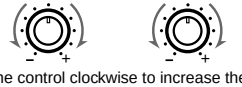
3 Start playback on the selected component. For operating instructions, refer to the various components manuals.

4 Adjust the MASTER VOLUME control.

The volume is indicated on the set's display.

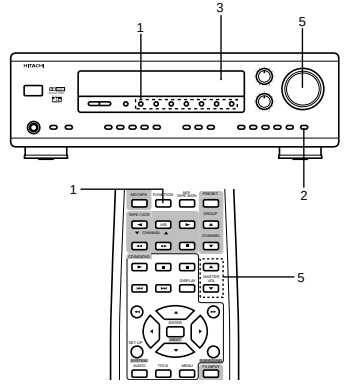
- The volume can be adjusted in units of 1dB from -60 to 0 to 18 dB.

5 Adjust the BASS and TREBLE.



Turn the control clockwise to increase the bass or treble, counterclockwise to decrease it.

Playing the digital program source

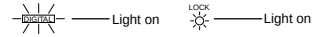


1 Press the button for the program source to be played that is connected to the digital input jacks.

EX: DVD

2 Select the DIGITAL input mode.

3 Check that the “DIGITAL” indicator is lit.



When digital signals are input properly, the “ LOCK” indicator is lit.

* If the “LOCK” indicator is not lit, check that the system setup's input setting (refer to page 7) and the connections are proper, that the component's power is turned on, etc.
* It is not possible to switch to the digital input mode if input sources do not have digital setting.

4 Start playback on the selected component. For operating instructions, refer to the various components' manuals.

5 Adjust the MASTER VOLUME control.

NOTES:

- NEVER try to play CD-ROM discs.
- If a CD-ROM is played, the “LOCK” indicator is lit but no sound is heard.

Simulcast playback

Use this switch to monitor a video source other than the audio source.

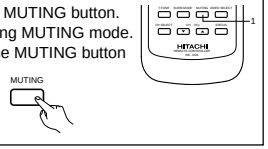
1 Press the VIDEO SELECT button repeatedly until the desired source appears on the display.

The video source switches as follows each time the VIDEO SELECT button is pressed:

Using the muting function

Use this to turn off the audio output temporarily.

1 Press the MUTING button.
- Cancelling MUTING mode. Press the MUTING button again.

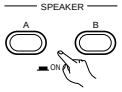


- **Caution:**
  Switching off the power of the unit and the remote control unit will cancel the settings.

Listen with headphones

1 Connect the headphones to the headphones jack of the front panel.

2 Press the SPEAKER A or B button to turn the speaker off.

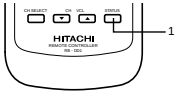


Front panel display

When an operation is performed on the remote control unit, that operation appears on the display, making it possible to check the operation visually.

The set's operating status can also be checked on the display using the procedure described below.

1 Press the STATUS button.



- The input and output sources and the surround setting, etc., appear in order on the display each time the button is pressed.

Recording the program source (recording the source currently being monitored)

1 Follow steps 1 to 3 under "Playing the analog program source".

2 Start recording on the tape or video deck. For instructions, refer to the component's operating instructions.

Simultaneous recording

The signals of the source selected with the function selector button are output simultaneously to the MD/TAPE OUT and VCR REC OUT jacks.
If a total of two tape and/or video decks are connected and set to the recording mode, the same source can be recorded simultaneously on each deck.
In addition, if the TAPE MONITOR (MD/TAPE MON) button is pressed, the audio signals from the tape deck are output to the VCR AUDIO REC OUT jacks.

■ **Tape monitor function**

When a three-head tape deck is used, the sound actually being recorded can be monitored during recording by pressing the MD/TAPE MON button.
Press the button again to cancel monitoring.

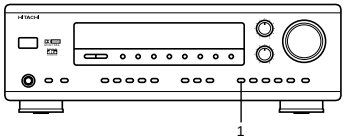
NOTE :
- Digital input signals cannot be recorded. To record, connect to the analog input terminals.

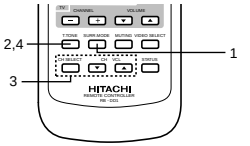
• USING THE SURROUND FUNCTION

You may enjoy an analog or digital surround system for your connected audio/video source.

Before playing with the surround function

Before playing with the surround function, be sure to use the test tones to adjust the playback level from the different speakers.
This adjustment can be performed with the remote control unit, as described below.
Adjusting with the remote control unit using the test tones is only effective in the DOLBY PRO LOGIC, DOLBY DIGITAL and DTS modes.
The adjusted levels are automatically stored in the memory.

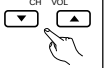




1 Set the Dolby Pro Logic, Dolby Digital or DTS modes.

2 Press the test tone button.

3 Test tones are produced from the speakers in the order shown below, at 4 second intervals for the first two cycles, 2 second intervals after that.



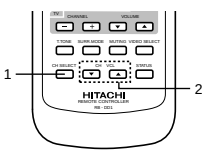
FL → C → FR → SR → SL → SW

Use the channel volume adjust buttons to adjust so that the volume of the test tones is the same for all the speakers.

Press the channel select button to select the speaker to be adjusted, if necessary.

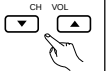
4 After completing the adjustment, press the test tone button again.

After adjusting using the test tones, adjust the channel levels either according to the playback sources or to suit your tastes, as described below.

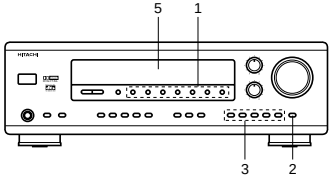


1 Press the channel select button to select the speaker to be adjusted.

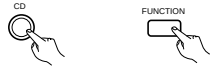
2 Adjust the level of the selected speaker.



Using surround system with analog input



1 Press the button for the program source to be played.
EX: CD



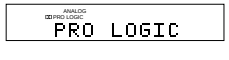
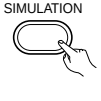
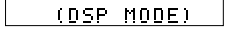
2 Select the ANALOG input mode.

Check that the “ANALOG” indicator lights up.

3 Select your preferred playback mode (see table below).

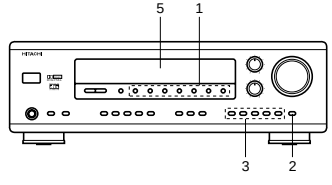
4 Start playback on the selected component. For operating instructions, refer to the various components’ manuals.

5 Check that the indicators for your selected playback light up.

Input Mode	Playback Mode		Display
	To select :	Press	
ANALOG	STEREO		
	PRO LOGIC		
	DSP		 See page 17.

Using surround system with digital input

There are 5 types of digital input mode — PCM (2 ch Audio, 32 kHz, 44 kHz, 48 kHz, 96 kHz), DOLBY DIGITAL (2 ch), DOLBY DIGITAL (5.1 ch), DTS (2 ch) (for CD playback only) as well as DTS (6 ch) (for DVD playback only). However, this unit will automatically detect the input signal of your connected audio/video source.



1 Press the button for the program source to be played.
EX: DVD

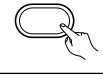
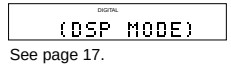
2 Select the DIGITAL input mode.

Check that the “LOCK” indicator lights up.

3 Select your preferred playback mode (see table below).

4 Start playback on the selected component. For operating instructions, refer to the various components’ manuals.

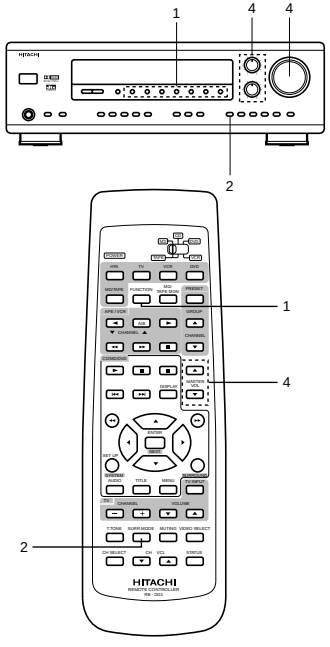
5 Check that the indicators for your selected playback light up.

Input Mode	Playback Mode		Indicators	Display
	To select :	Press		
PCM (2ch AUDIO) EX.: CD	STEREO			
	PRO LOGIC			
	DSP			 See page 17.

Input Mode	Playback Mode		Indicators	Display
	To select :	Press		
DOLBY DIGITAL (2 ch)	STEREO	STEREO	LOCK, DIGITAL	DIGITAL STEREO
	PRO LOGIC	DOLBY/DTS SURROUND	LOCK, DIGITAL	DIGITAL PRO LOGIC
DOLBY DIGITAL	STEREO	STEREO	LOCK, DIGITAL	DIGITAL STEREO
	DOLBY DIGITAL	DOLBY/DTS SURROUND	LOCK, DIGITAL	DIGITAL DIGITAL DOLBY DIGITAL
DTS (CD playback)	STEREO	STEREO	LOCK, DTS	DIGITAL STEREO
	DTS	DOLBY/DTS SURROUND	LOCK, DTS	DIGITAL DTS (white)
DTS (DVD playback)	STEREO	STEREO	LOCK, DTS	DIGITAL STEREO
	DTS	DOLBY/DTS SURROUND	LOCK, DTS	DIGITAL DTS (red)

Using the Dolby Pro Logic mode

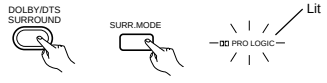
Play a pre-recorded source with the DOLBY SURROUND mark.



1 Press the button for the program source to be played.

EX.: VCR

2 Set the Dolby surround mode.



3 Start playback on the selected component. For operating instructions, refer to the various components' manuals.

4 Adjust the MASTER VOLUME and TONE controls.

NOTE:

- There are four Dolby Surround Pro Logic modes (NORMAL, PHANTOM, WIDE and 3CH. LOGIC) This unit sets the mode automatically according to the types of speakers set during the system setup process.

Using the Dolby Digital mode

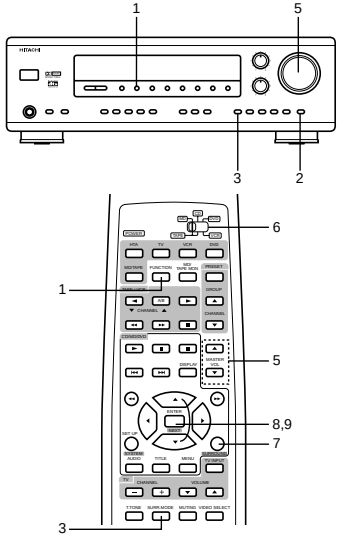
Play a pre-recorded source (DVD) with the DOLBY DIGITAL mark.

1 Press the DVD button.

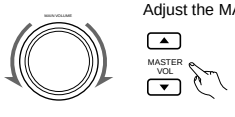
2 Select the DIGITAL input mode.

3 Set the DOLBY surround mode.

4 Start playback on the selected component.
For operating instructions, refer to the various components' manuals.
- The PRO LOGIC indicator lights when a 2-channel Dolby Digital signal is input.

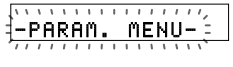


5 Adjust the MASTER VOLUME control.



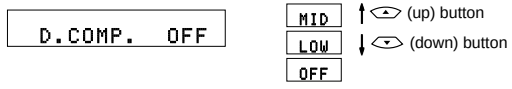
6 Set the slide switch to "CD" or "MD".

7 Set the surround parameter according to the source and adjust the tone.
First press the SURROUND button.



Then press the NEXT button to switch to the various settings as follows.

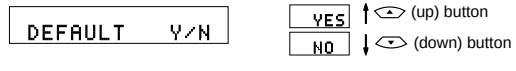
8 Use the ▲ (up) and ▼ (down) buttons to set the D. Comp.



Press the SURROUND button to finish the setting.

Press the NEXT button to switch to the default setting.

9 To reset the settings to the factory defaults, use the ▲ (up) and ▼ (down) buttons to display "Yes", then press the SURROUND button twice.
The settings are entered and the surround parameter setting mode is finished.



Press the SURROUND button to finish the setting.

Press the NEXT button to switch to the D. COMP. setting.

■ Surround Parameters

D.COMP. (Dynamic Range Compression):
Motion picture soundtracks have tremendous dynamic range (the contrast between very soft and very loud sounds). For listening late at night, or whenever the maximum sound level is lower than usual, the Dynamic Range Compression allows you to hear all of the sounds in the soundtrack (but with reduced dynamic range). (This only works when playing program sources recorded in Dolby Digital) Select one of the four parameters ("OFF", "LOW", "MID" (middle) or "HI" (high)). Set to OFF for normal listening.

NOTE:
- When playing back in the Dolby Pro Logic mode, depending on the settings of each output channel, it may not be possible to make a setting of the master volume that exceeds 3dB.

Using the DTS mode

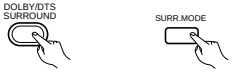
Play a pre-recorded source with DTS mark.

1 Press the DVD button.

EX.: DVD

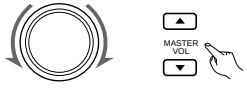
2 Select the DIGITAL input mode.

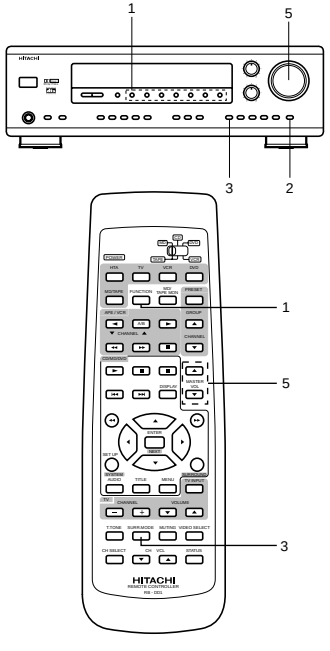
3 Set the DTS mode.



4 Start playback on the selected component. For operating instructions, refer to the various component's manuals.

5 Adjust the MASTER VOLUME control.





NOTE:

- CDs with the DTS feature require a decoder, so when using the "ANALOG" input mode, a noise may be produced by the DTS encoded signal. Therefore, before playing the DTS feature, be sure to select the DIGITAL input mode.

Using the DSP surround simulation

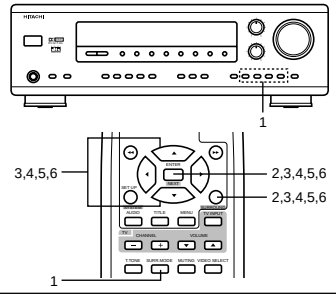
- This unit equipped with a high performance DSP (Digital Signal Processor) which uses digital signal processing to synthetically recreate the sound field. One of eight preset surround modes can be selected according to the program source and the parameters can be adjusted according to the conditions in the listening room to achieve a more realistic, powerful sound. These surround modes can also be used for program sources not recorded in Dolby Surround Pro Logic, Dolby Digital or DTS.

• Surround modes and their features

1	STEREO	Sound is produced from the two front channels. (Nothing is output from the Surround and center channels.)
2	6CH EXT. IN	Connect the output of the external decoder to this unit's 6CH EXT. IN.
3	MULTI STEREO	In this mode, the signals of the front left channel are output from the left surround channel, the signals of the front right channel are output from the right surround channel, and the same (in-phase) component of the left and right channels is output from the center channel. This mode provides all speaker surround sound, but without directional steering effects, and works with any stereo program source.
4	MONO MOVIE	Select this when watching monaural movies for a greater sense of expansion.
5	ROCK ARENA	Use this mode to achieve the feeling of a live concert in an arena with reflected sounds coming from all directions.
6	JAZZ CLUB	This mode creates the sound field of a live house with a low ceiling and hard walls. This mode gives jazz a very vivid realism.
7	STADIUM	Use this to enjoy stadium effect.
8	MATRIX	Select this to emphasize the sense of expansion for music sources recorded in stereo. Signals consisting of the difference component of the input signals (the component that provides the sense of expansion) processed for delay are output from the surround channel.

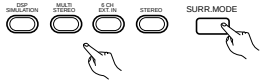
- Depending on the program source being played, the effect may not be very noticeable. In this case, try other surround modes, without worrying about their names, to create a sound field suited to your tastes.
- The presence of surround parameter settings as well as the setting items will differ depending on the surround mode.

Preparations: Select the input device and start playback.

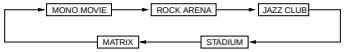


1

Select the surround mode according to the input source.



The surround mode switches in the following order each time the DSP SIMULATION button is pressed:



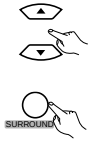
2

Set the surround parameter according to the source and adjust the tone.
First press the SURROUND button.

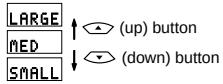
Then press the NEXT button to switch to the various settings as follows.
- DSP: MATRIX mode → skip to step 5
- DSP: Other modes → step 3

NOTE: Set the slide switch to “CD” or “MD” when setting the surround parameters. Surround parameters cannot be set whilst in STADIUM mode.

3



Use the ⌓ (up) and ⌓ (down) buttons to set the room size.

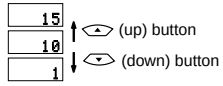


Press the SURROUND button to finish the setting.

Press the NEXT button to switch to the effect level setting.

4

Use the ⌓ (up) and ⌓ (down) buttons to set the effect level.

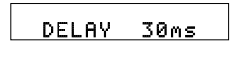


Press the SURROUND button to finish the setting.

Press the NEXT button to switch to the default setting (STEP 6).

5

Use the ⌓ (up) and ⌓ (down) buttons to set the delay time.

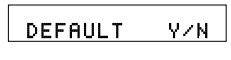


Press the SURROUND button to finish the setting.

Press the NEXT button to switch to the default setting (STEP 6).

6

To reset the settings to the factory defaults, use the ⌓ (up) and ⌓ (down) buttons to display “Yes”, then press the SURROUND button twice. The settings are reset and the surround parameter setting mode is finished.



If there is no need to reset, press the SURROUND button when the above is displayed or when “NO” has been set to finish the setting.

Press the NEXT button to switch to the room size or delay time setting.

■ Surround Parameters

ROOM SIZE ..... “Room size” refers to the size of the sound field. –There are three parameters: “Small” ⟷ “Medium” ⟷ “Large”

EFFECT LEVEL ..... “Effect level” refers to the strength of the effect sounds. If the sound becomes distorted, lower the level. Parameters “1” ~ “15”

DELAY TIME ..... This can be set to between 0 and 150 msec for the MATRIX mode.

NOTES:
- When the mode is switched to Dolby Digital encoded signals while playing PCM digital signals in the surround modes except STEREO, the mode is forcibly switched to the Dolby Surround mode.
- To listen to the signal of equipment that is connected to the “6CH EXT. IN” input jack, make sure the video input of the equipment is selecting the connected function and select “6CH EXT. IN” with the “6CH EXT. IN” mode button or with the remote control mode button.

■ Surround modes and parameters

The following table shows the presence or absence of signals in the various modes, and whether or not they can be controlled. Initial settings are indicated in parentheses.

MODE	OUTPUT CHANNEL (0 dB)				PARAMETER SOURCE			
	FRONT/LR	CENTER	SURROUND	SUBWOOFER	ROOM SIZE	EFFECT LEVEL	DELAY TIME	D. COMP.
STEREO	○	×	×	R	×	×	×	○ Dolby Digital SOURCE ONLY (OFF)
DOLBY PRO LOGIC	○	R	R	R	×	×	×	○ Dolby Digital SOURCE ONLY (OFF)
DOLBY DIGITAL	○	R	R	R	×	×	×	○ (OFF)
DTS	○	R	R	R	×	×	×	×
6CH EXT.IN	○	R	R	R	×	×	×	×
MULTI STEREO	○	R	R	R	×	×	×	×
MONO MOVIE	○	R	R	R	○ (Medium)	○ (10)	×	×
ROCK ARENA	○	R	R	R	○ (Medium)	○ (10)	×	×
JAZZ CLUB	○	R	R	R	○ (Medium)	○ (10)	×	×
STADIUM	○	R	R	R	×	×	×	×
MATRIX	○	R	R	R	×	×	○ (30 msec)	×

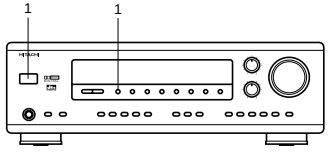
○ : Signal preset or controllable. × : No signal or not controllable.

R : Can be turned on and off according to the speaker configuration setting.

• LISTENING TO THE RADIO

Auto preset memory

This unit is equipped with a function for automatically searching for FM broadcast stations and storing them in the preset memory.



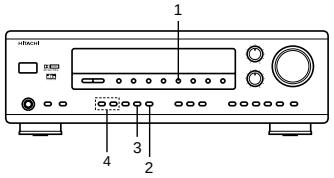
1 Switch on the unit using the main unit's power operation switch while holding in the GROUP button. The unit automatically begins searching for FM broadcast stations.

2 When the first FM broadcast station is found, that station is stored in the preset memory at channel A1. Subsequent stations are automatically stored in order at preset channels A2 to A8, B1 to B8, C1 to C8, D1 to D8 and E1 to E8, for a maximum of 40 stations.

3 Channel A1 is tuned in after the auto preset memory operation is completed.

NOTES:
- If an FM station cannot be preset automatically due to poor reception, use the "Manual tuning" operation to tune in the station, then preset it using the manual "Preset memory" operation.
- To interrupt this function, press the power operation button.

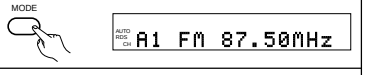
Auto tuning



1 Set the input function to "TUNER".

2 Watching the display, press the BAND button to select the desired band (AM or FM).

3 Press the MODE button to set the auto tuning mode.



4 Press and hold the TUNING UP or DOWN button for one second.

- Automatic searching begins, then stops when a station is tuned in or if the TUNING UP or DOWN button is pressed during the search.

NOTE:
- When in the auto tuning mode on the FM band, the "STEREO" indicator lights on the display when a stereo broadcast is tuned in. At open frequencies, the noise is muted and the "TUNED" and "STEREO" indicators turn off.

Manual tuning

1 Set the input function to "TUNER".

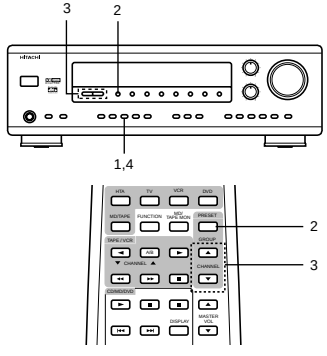
2 Watching the display, press the BAND button to select the desired band (AM or FM).

3 Press the MODE button to set the manual tuning mode. Check that the display's "AUTO" indicator turn off.

4 Press the TUNING UP or DOWN button to tune in the desired station.
The frequency changes continuously when the button is held in.

NOTE:
- When the manual tuning mode is set, FM stereo broadcasts are received in monaural and the "STEREO" indicator turns off.

Preset memory

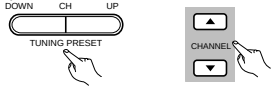


Preparations:
Use the " Auto tuning" or "Manual tuning" operation to turn in the station to be preset in the memory.

1 Press the MEMORY button.

2 Press the GROUP button and select the desired memory block (A to E).

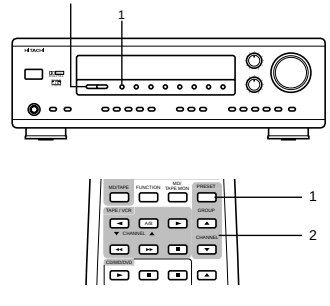
3 Press the TUNING PRESET UP or DOWN button to select the desired preset channel (1 to 8).



4 Press the MEMORY button again to store the station in the preset memory.

- To preset other channels, repeat steps 1 to 4. A total of 40 broadcast stations can be preset – 8 stations (channels 1 to 8) in each of blocks A to E.

Recalling preset stations



1 Watching the display, press the GROUP button to select the preset memory block.

2 Watching the display, press the TUNING PRESET UP or DOWN button to select the desired preset channel.

RDS (Radio Data System)

RDS (works only on the FM band) is a broadcasting service which allows station to send additional information along with the regular radio program signal.
The following three types of RDS information can be received on this unit:

■ **Program Type (PTY)**

PTY identifies the type of RDS program.
The program types and their displays are as follows:

NEWS	News	VARIED	Varied
AFFAIRS	Affairs	POP M	Pop Music
INFO	Information	ROCK M	Rock Music
SPORT	Sports	M.O.R. M	Middle of the Road Music
EDUCATE	Education	LIGHT M	Light Classical
DRAMA	Drama	CLASSICS	Serious Classical
CULTURE	Culture	OTHER M	Other Music
SCIENCE	Science		

■ **Traffic Program (TP)**

TP identifies programs that carry traffic announcements.
This allows you to easily find out the latest traffic conditions in your area before you leaving home.

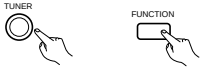
■ **Radio Text (RT)**

RT allows the RDS station to send text messages that appear on the display.

RDS Search

Use this function to automatically tune to FM stations that provide RDS service.

1 Set the input function to “TUNER”.



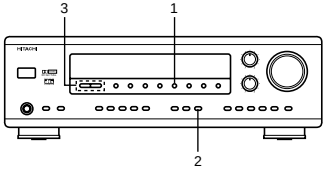
2 Press the RDS button until “RDS SEARCH” appears on the display.

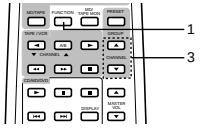
3 Press the TUNING PRESET UP or DOWN button to automatically begin the RDS search operation.

If no RDS stations is found with the above operation, all the reception band are searched.

4 When a broadcast station is found, that station’s name appears on the display.

5 To continue searching, repeat step 3.
If no other RDS station is found when all the frequencies are searched, “NO RDS” is displayed.

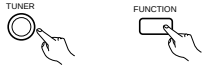




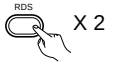
PTY Search

Use this function to find RDS stations broadcasting a designated program type (PTY).
For a description of each program type, refer to “Program Type (PTY)”.

1 Set the input function to “TUNER”.



2 Press the RDS button until “PTY SEARCH” appears on the display.



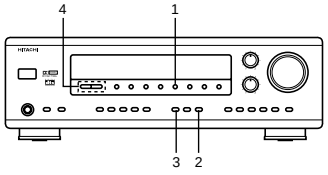
3 Watching the display, press the PTY button to call out the desired program type.

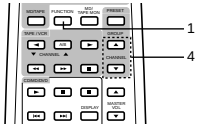
4 Press the TUNING PRESET UP or DOWN button to automatically begin the PTY search operation.

If there is no station broadcasting the designated program type with above operation, all the reception bands are searched.

5 The station name is displayed on the display after searching stops.

6 To continue searching, repeat step 4.
If no other station broadcasting the designated program type is found when all the frequencies are searched, “NO PTY” is displayed.

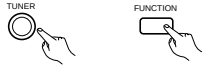




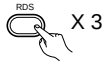
TP Search

Use this function to find RDS stations broadcasting traffic program (TP stations).

1 Set the input function to “TUNER”.



2 Press the RDS button until “TP SEARCH” appears on the display.

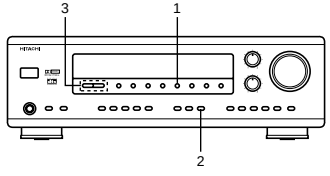


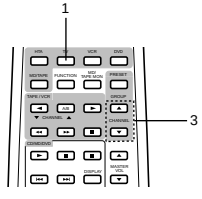
3 Press the TUNING PRESET UP or DOWN button to automatically begin the TP search operation.

If no TP station is found with the above operation, all the reception bands are searched.

4 The station name is displayed on the display after searching stops.

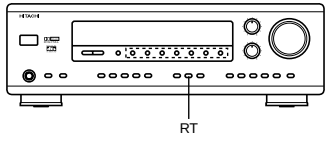
5 To continue searching, repeat step 3.
If no other TP station is found when all the frequencies are searched, “NO TP” is displayed.





RT (Radio Text)

“RT” appears on the display when radio text data is received.
When the RT button is pressed while receiving an RDS broadcast station, the text data broadcast from the station is displayed. To turn the display off, press the RT button again. If no text data is being broadcast, “NO TEXT DATA” is displayed.

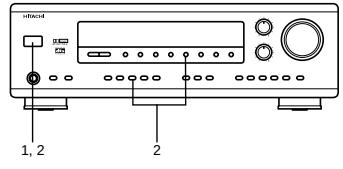


• LAST FUNCTION MEMORY

- This unit is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off.
- The unit is also equipped with a back-up memory. This function provides approximately one week of memory storage when the main unit’s power switch is off and with the power cord disconnected.

• INITIALIZATION OF THE MICROPROCESSOR

- When the indication of the display is not normal or when the operation of the unit does not shows the reasonable result, the initialization of the microprocessor is required by the following procedure.



1 Switch off the unit.

2 Hold the TUNER button and MEMORY button and switch on the unit power.

3 Check that the entire display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons and the microprocessor will be initialized.

• TROUBLESHOOTING

If a problem should arise, first check the following.
1. Are all connections correct?
2. Have you operated the receiver according to the Operating Instructions?
3. Are the speakers, turntable other components operating property?
If this unit is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction.
Disconnect the power immediately and contact your store of purchase.

	Symptom	Cause	Measures
Common problems arising when listening to the CD, records, tapes, and FM broadcasts, etc.	DISPLAY not lit and sound not produced when power switch set to on.	• Power cord not plugged in securely.	• Check the insertion of the power cord plug.
	DISPLAY lit but sound not produced.	• Speaker cords not securely connected. • Improper position of the audio function button. • Volume control set to minimum. • MUTING is on. • Digital signals not input Digital input selected.	• Connect securely. • Set to a suitable position. • Turn volume up to suitable level. • Switch off MUTING. • Input digital signals or select input jacks to which digital signals are being input.
	DISPLAY is not displayed and the "ON/STANDBY" led flashes at a high rate.	• Speaker terminal are short-circuited. • Block the ventilation holes of the set. • The unit is operating at continuous high power conditions and/or inadequate ventilation.	• Switch power off, connect speakers properly, then switch power back on. • Turn off the set's power, then ventilate it well to cool it down. • Turn off the set's power, then ventilate it well to cool it down.
	Sound produced only from one channel.	• Incomplete connection of speaker cords. • Incomplete connection of input/output cords.	• Connect securely. • Connect securely.
	Positions of instruments reversed during stereo playback.	• Reverse connections of left and right speakers or left and right input/output cords.	• Check left and right connections.
When playing records	Humming noise produced when record is playing.	• Ground wire of turntable not connected properly. • Incomplete PHONO jack connection. • TV or radio transmission antenna nearby.	• Connect securely. • Connect securely. • Contact your store of purchase.
	Howling noise produced when volume is high.	• Turntable and speaker systems too close together. • Floor is unstable and vibrates easily.	• Separate as much as possible. • Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available).
	Sound is distorted.	• Stylus pressure too weak. • Dust or dirt on stylus. • Cartridge defective.	• Apply proper stylus pressure. • Check stylus. • Replace cartridge.
	Volume is weak.	• MC cartridge being used.	• Replace with MM cartridge or use a head amplifier or step-up transformer.
Remote control unit.	This unit does not operate properly when remote control unit is used.	• Batteries dead. • Remote control unit too far from this unit. • Obstacle between this unit and remote control unit. • Different button is being pressed. • ⊕ and ⊖ ends of battery inserted in reverse.	• Replace with a new batteries. • Move closer. • Remove obstacle. • Press the proper button. • Insert batteries properly.

• SPECIFICATIONS

- **Audio section**
  (Power amplifier)

Rated output:	Front:	80W + 80W	(6 Ω/ohms, 20 Hz ~ 20 kHz with 0.1 % T.H.D.)
	Centre:	80W	(6 Ω/ohms, 20 Hz ~ 20 kHz with 0.1 % T.H.D.)
	Surround:	80W + 80W	(6 Ω/ohms, 20 Hz ~ 20 kHz with 0.1 % T.H.D.)
SINUS power:	Front:	90W + 90W	(6 Ω/ohms, 1 kHz, 0.1 %)
	Centre:	90W	(6 Ω/ohms, 1 kHz, 0.1 %)
	Surround:	90W + 90W	(6 Ω/ohms, 1 kHz, 0.1 %)
Output terminals:	Front:	A or B	6 to 16 Ω/ohms
		A + B	12 Ω/ohms or more
	Center/Surround:		6 to 16 Ω/ohms

(Analog)
LINE input

Input sensitivity / input impedance:	200 mV / 47 kΩ/kohms
Frequency response:	10 Hz ~ 50 kHz: +1, –3 dB
S/N ratio:	93 dB (IHF-A weighted)
Total harmonic distortion:	0.1% (20 Hz ~ 20 kHz)

PHONO input-REC OUT

Input sensitivity / input impedance:	2.5 mV/47 kΩ/kohms
RIAA deviation:	±1 dB (20 Hz ~ 20 kHz)
S/N ratio:	74 dB (IHF-A weighted, with 5mV input)
Total harmonic distortion:	0.03% (1 kHz, 3V)
Rated output / Maximum output:	150 mV / 7V

- **Video section**
  (Composite)

Input/output level and impedance:	1 Vp-p, 75 Ω/ohms
Frequency response:	5 Hz ~ 10 MHz +1, –3 dB

(S-Video)

Input/output level and impedance:	Y=1 Vp-p, C=0.286 Vp-p
Frequency response:	5 Hz ~ 10 MHz +1, –3 dB

(Component)

Input/output level and impedance:	Y=1 Vp-p, C_B=0.7 Vp-p, C_R=0.7 Vp-p
Frequency response:	5 Hz ~ 10 MHz +1, –3 dB

- **Tuner section**

	[FM] (note: µV at 75Ω/ohms, 0 dBF = 1×10^{-15} W)		**[AM]**
Receiving range:	87.50 MHz ~ 108.00 MHz (0.05 MHz step)		522 kHz ~ 1611 kHz (9 kHz step)
Usable sensitivity:	2.0 µV (17.2 dBf)		600 µV
50 dB quieting sensitivity:	STEREO	23µV (38.5 dBf)	
S/N ratio:	MONO	80 dB (IHF-A weighted)	
	STEREO	75 dB (IHF-A weighted)	
Total harmonic distortion:	MONO	0.2% (1kHz)	
	STEREO	0.4% (1kHz)	

- **General**

Power supply:	AC 230V, 50 Hz
Power consumption:	180 W (Standby mode = 1.5W)
Maximum external dimensions:	434 (W) × 144 (H) × 320 (D) mm
Weight:	8.1 kg

- **Remote control unit (RB-DD1)**

Batteries:	R6P/AA Type (two batteries)
External dimensions:	54 (W) × 172 (H) × 27.2 (D) mm
Weight:	100 g (including batteries)

* For purposes of improvement, specifications and design are subject to change without notice.

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